

The Approach to Steady-State Decadence

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The increasing importance of mathematics in modeling certain social phenomenon has engendered a unique application of various analytical methods that have hitherto been reserved for mathematicians, scientists, engineers, and to a lesser extent economists and political scientists. With the advent of our contemporary decadent age, however, it has become increasingly necessary to apply these tools in the hopes of promoting a better understanding of the current condition and the future implications of this very degeneration.

Namely, I raise this concern because of recent allusions to and the persistent criticism directed toward the so-called “decadent youth” and, more generally, the erosion of the Judeo-Christian ideals which we have held so near. Indeed, this urgent crisis has been an ongoing issue since the nineteen sixties but has recently been thrust into the political foreground with the prominence of certain socially conservative politicians.

Our socially conservative statesmen, dedicated to the very morality which we all endeavor to uphold, have taken unusually active measures to thwart the perceived exponential increase in the level of decadence. It was suggested, for example, in a recent State of the Union Address the need to increase drug testing of high school students so as to deter them from contributing to the rise in decadence; furthermore, socially conservative politicians have called for a Constitutional Amendment to ban gay marriage, which, studies show, has contributed about 8 percentage points to the total 11% increase in decadence in the past seven years.

Using simple mathematical modeling, however, I will show that although decadence is indeed a reality, it is not nearly as threatening as we may have once perceived. We begin by considering the dynamics behind the level of decadence, q . Considering an excerpt from “Slip Slidin’ Away,” by prominent singer and songwriter Paul Simon, we accept axiomatically:

*You know the nearer your destination,
The more you’re slip slidin’ away.*

We prove, furthermore, that all people have a destination. Let us call the set of all people P . Let us call the set of all people who have direction in their life S and the set of those people who do not have direction T . It is trivial that $S, T \in P$. Furthermore, since one must either have direction or not have direction, it follows trivially that $P = S \cup T$. Those who claim to have direction in life imply that they are directed toward a particular goal, which we call the destination. Those who claim to have no direction imply that they are directed toward having no direction, which is itself a destination. Set subset T , therefore, is the empty set. Since $P \setminus T = S$, we have shown that all people in set P are in the subset S . Specifically, $P = S$ and T is the empty set. Therefore, all people have a destination.

With this in mind, let us model the growth of the level of decadence. Let us call the average of all destinations δ the composite destination D . Applying Simon’s lemma, we write dq/dt as the time derivative of the decadence level, where $-dq/dt$ is the rate at which we are “slip slidin’ away”—receding from our destination—given as a function of the distance to our destination D . To be consistent with Simon’s lemma, we impose direct proportionality between the negative of the distance remaining to our destination and rate at which we are slip slidin’ away.

$$-\frac{dq}{dt} \propto -(D - q) \tag{1}$$

To complete our equation, we define κ to be the constant of proportionality, which can be thought of intuitively as the detriment index, the multiplying factor of our decadence; Equation 1 then becomes,

$$-\frac{dq}{dt} = -\kappa(D - q)$$

Solving this first order differential equation for q , with initial conditions $q(0) = q_0$, we find that,

$$q(t) = D + (q_0 - D)e^{-\kappa t}$$

We plot this solution over a large enough time interval to observe the steady-state response.

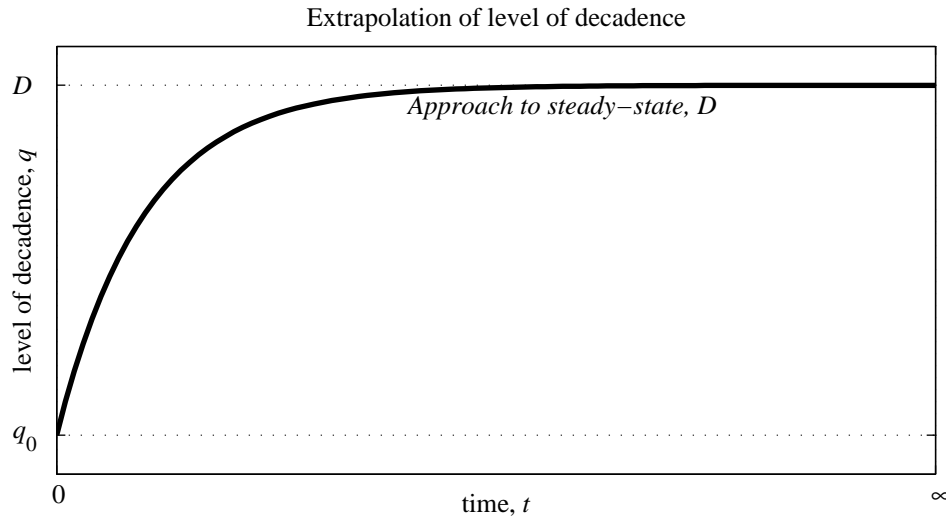


Figure 1: Approach to steady-state decadence over time

Based on Figure 1, we can conclude that if we are near our destination D , then we are near the steady-state and the rate of increase in the level of decadence is negligible. This plot demonstrates a particularly nontrivial point: that our steady-state level of decadence is given by our destination. Since our destination is the ultimate achievement, we need not worry about the decadence level as a hindrance to our destination, for over time we will achieve it. I conclude, therefore, that the social conservatives' policies are excessive.

As evidenced by the above analysis, decadence is not a hindrance to achieving our goal; rather, it is a factor in the attainment of such goal. That is, we may be as decadent as we wish, increasing our detriment index κ , and we will only approach our goal faster.